

What is claimed is:

1. A water treatment plant, comprising:

a first purifying filter adapted to purify an input water stream and output a purified stream;

a first microporous membrane ultrafilter effective to sterilize a water stream connected to receive said purified stream and further filter it;

a second microporous membrane ultrafilter effective to sterilize a water stream connected in series after said first microporous membrane ultrafilter;

said first and second microporous membrane ultrafilters each being contained in one or respective housings and having separate seals to said one or respective housings that are remote from each other;

said first and second microporous membrane ultrafilters having surfaces that are separated by a substantial distance.

2. A plant as in claim 1 wherein said first and second microporous membrane ultrafilters are commonly housed in a single housing and separated by a spacer of porous inert material and sealed to said single housing by separate seals.

3. A controller device for a water treatment plant, comprising:

a controller adapted to read a unique identifier of a connected filter and a fluid quality sensor reading;

a pump;

said controller being configured to continue pumping if, during a pumping operation, said fluid quality sensor gives a first indication indicating that said filter module is performing adequately;

said controller being configured to continue pumping until a predetermined quantity of fluid has been pumped if, during a pumping operation, said fluid quality sensor gives a second indication indicating that said filter module will fail imminently, but thereafter to not pump fluid if a same unique identifier is read as when said second indication was received by it or by another similar controller.

4. A controller as in claim 3, wherein said controller includes a data carrier reader to read said unique identifier stored in said data carrier attached to said module.

5. A controller as in claim 3, wherein said controller is configured to not pump fluid if a same unique identifier is read as when said second indication was received by it or by another similar controller by comparing a read identifier with a stored identifier in said controller or one read by said controller from a database of unique identifiers.

6. A water treatment plant comprising:  
a filter module including first and second filters connected in series and connectable to a supply of fluid;  
a pump;  
a controller with a fluid quality sensor connected thereto;  
said fluid quality sensor being connected to detect a quality of fluid between said first and second filters;

a filter module detector connected to said controller configured to uniquely detect a filter module connected to said pump;

said controller being connected to control said pump responsively to a signal from said fluid quality sensor and said module detector;

said controller being configured to continue pumping if, during a pumping operation, said fluid quality sensor gives a first indication;

said controller being configured to continue pumping a until a predetermined quantity of fluid has been pumped if, during a pumping operation, said fluid quality sensor gives a second indication, but thereafter to not pump fluid until said filter module is replaced with a different one not corresponding to said unique one.

7. A plant as in claim 6, wherein said first and second filters are deionizing filters and said fluid quality sensor is a conductivity sensor.

8. A plant as in claim 6 wherein said filter module detector is a reader for a data carrier.

9. A fluid container device, comprising:

a sealed sterilized container with a conductivity sensor in communication with an interior of said container;

at least one sealed connector adapted for adding fluid to said container;

at least one sealed connector adapted for removing fluid from said container.

10. A device as in claim 9, wherein said conductivity sensor is contained in a test line in communication with said interior and adapted to be connected to a source of suction.

11. A device as in claim 9, wherein said conductivity sensor is contained in a test line in communication with said interior and adapted to be connected to a source of suction thereby to draw a sample of contents of said container.

12. A device as in claim 11, wherein said test line includes a check valve to prevent ingress of contaminants into said container.

13. A device as in claim 9, wherein said conductivity sensor is located within a cage inside said container, said cage being configured to prevent said container from isolating said sensor from fluid in said container proper.

14. A device as in claim 9, wherein said at least one sealed connector in adapted for adding fluid to said container includes an inline sterile filter.

15. A fluid container device, comprising:  
a sealed sterilized container with a conductivity sensor in communication with an interior of said container;  
at least a first sealed connector at the end of a first line adapted for adding fluid to said container, said first line having an inline sterile filter to prevent contamination of contents of said container when fluid is added thereto, said first line having a dual connector with two lumens, the first line being connected to a first of said two lumens and said connector being

connected to a second of said two lumens, said dual connector having a removable seal.

16. A device as in claim 15, further comprising at least a second sealed connector adapted for removing fluid from said container.

17. A water treatment plant for preparing a batch of treatment fluid for use in extracorporeal blood treatment, said plant including a strong acid cation and strong base anion in such a configuration as to substantially eliminate reduce colloidal aluminum (Alum) to soluble aluminum in a succeeding deionization filter.

18. A water treatment plant for preparing treatment fluid for use in extracorporeal blood treatment, said plant including a resistivity monitor that is configured to shut a pump down when resistivity falls below a predetermined conductivity.

19. A plant as in claim 18, wherein said predetermined conductivity is about 2 megohms.

20. A water treatment plant for preparing treatment fluid for use in extracorporeal blood treatment, said plant including an ultraviolet lamp of such intensity and wavelength as to provide disintegration of chloramines.

21. A plant as in claim 20 in which said lamp emits energy that includes a substantial component at approximately 245 nm wavelength and has an output power in the range  $750 \text{ mJ/cm}^2$  up to  $1500 \text{ mJ/cm}^2$ .

22. A fluid container device, comprising:  
a sealed sterilized container with a conductivity sensor in communication with an interior of said container;

at least a first sealed connector at the end of a first line adapted for adding fluid to said container,

said first sealed connector having a second connector inline therewith;

said second connector being configured to close said first line when said second connector is disconnected from said first connector such that said first connector may be left attached to a mating external connector when said sealed sterilized container is removed from said first connector and said closed first line provides a sterile seal to said mating external connector.

23. A treatment plant for preparing purified water for medical use, comprising:

a controller having a data carrier reader;

a station on said controller adapted to receive containers for receiving purified water, each carrying software,

said controller being configured to download software instructions via said data carrier reader for performing a water treatment operation when a container is received by it;

said controller being further configured to execute said software instructions.

24. A treatment plant for preparing purified water for medical use, comprising:

a controller having a data carrier reader;

a station on said controller adapted to receive containers for receiving purified water, each having a respective data carrier with a unique identifier,

said controller being configured to read a unique identifier and compare a read unique identifier from a respective data carrier, when a container is received by said station, to at least one other identifier and to prevent a water preparation operation or proceed with a water preparation operation responsively to a result of said comparison.

25. A plant as in claim 24, wherein said controller is further configured with an output and to output instructions to replace a container when a result of said comparison indicates that a container was previously used.

26. A blood treatment machine, comprising:

a controller having a data carrier reader;

a station on said controller adapted to receive filled containers of purified water, each having a respective data carrier with an indicator of a date that a corresponding container was filled with purified water,

said controller being configured to read said indicator and to prevent blood treatment operation or proceed therewith responsively to said indicator.

27. A treatment plant for preparing purified water for medical use, comprising:

a controller having a data carrier reader;

a station on said controller adapted to receive filter modules for purifying water, each having a respective data carrier with a unique identifier, said controller being configured to read a unique identifier and compare a read unique identifier from a respective data carrier, when a module is received by said station, to at least one other identifier and to prevent a water preparation operation or proceed with a water preparation operation responsively to a result of said comparison.

28. A medical material preparation device, comprising:  
a controller having a data carrier reader;  
a station on said controller adapted to receive consumable elements required for preparing a medical material used for medical treatment, each element having a respective data carrier with a unique identifier,  
said controller being configured to read a unique identifier and compare a read unique identifier from a respective data carrier, when a consumable element is received by said station, to at least one other identifier and to prevent a preparation operation or proceed with a preparation operation responsively to a result of said comparison.

29. A replaceable multi-use filter module for preparing purified water, comprising:  
one or more cartridges with a strong acid cation (SAC) filter bed and a strong base anion (SBA) filter bed in at least two segregated layers and configured such as to substantially remove colloidal aluminum from water treated with said module.



30. A module as in claim 29, wherein said SAC and SBA beds are in separate cartridges.